



VITAMIN A ACETATE 3-4% CIS (10,19,19,19-D4, 96%)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 31/01/2011

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Version: 2.1

DLM-2244

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance
Substance name : VITAMIN A ACETATE 3-4% CIS (10,19,19,19-D4, 96%)
EC-No. : 204-844-2 (Unlabeled)
CAS-No. : 127-47-9 (Unlabeled)
Product code : DLM-2244
Formula : C6H6(CH3)3CHCHC(CD3)CDCHCHC(CH3)CHCH2OCOCH3
Synonyms : Retinyl acetate / Retinol acetate

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category : Professional use
Industrial/Professional use spec : For professional use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810
USA

USA: 1-800-322-1174 Int: 1-978-749-8000
cilsales@isotope.com www.isotope.com

Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)
International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Repr. 1B H360
Aquatic Chronic 4 H413

Full text of hazard classes and H-statements : see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

R53
Repr.Cat.1; R60
Repr.Cat.1; R61

Full text of R-phrases: see section 16

GHS-US classification

Repr. 1A H360
Aquatic Chronic 4 H413

Adverse physicochemical, human health and environmental effects

No additional information available

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2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS08

Signal word (CLP) :

: Danger

Hazard statements (CLP) :

: H360 - May damage fertility. Suspected of damaging the unborn child. (in contact with skin, if inhaled, if swallowed)
H413 - May cause long lasting harmful effects to aquatic life

Precautionary statements (CLP) :

: P273 - Avoid release to the environment.
P280 - Wear protective clothing, protective gloves.
P308+P313 - IF exposed or concerned: Get medical advice/attention.
P405 - Store locked up.
P501 - Dispose of contents/container to Comply with applicable regulations

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS08

Signal word (GHS-US) :

: Danger

Hazard statements (GHS-US) :

: H360 - May damage fertility or the unborn child (Dermal, Inhalation, oral)
H413 - May cause long lasting harmful effects to aquatic life

Precautionary statements (GHS-US) :

: P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P273 - Avoid release to the environment.
P280 - Wear protective clothing, protective gloves.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P405 - Store locked up.
P501 - Dispose of contents/container to Comply with applicable regulations

2.3. Other hazards

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
VITAMIN A ACETATE 3-4% CIS (10,19,19,19-D4, 96%)	(CAS-No.) 127-47-9 (Unlabeled) (EC-No.) 204-844-2 (Unlabeled) (EC Index-No.)	100	R53 Repr.Cat.1; R60 Repr.Cat.1; R61

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
VITAMIN A ACETATE 3-4% CIS (10,19,19,19-D4, 96%)	(CAS-No.) 127-47-9 (Unlabeled) (EC-No.) 204-844-2 (Unlabeled) (EC Index-No.)	100	Repr. 1B, H360 Aquatic Chronic 4, H413

Full text of R- and H- phrases: see section 16

Name	Product identifier	%	GHS-US classification
VITAMIN A ACETATE 3-4% CIS (10,19,19,19-D4, 96%) (Main constituent)	(CAS-No.) 127-47-9 (Unlabeled)	100	Repr. 1A, H360 Aquatic Chronic 4, H413

Full text of H-phrases: see section 16

3.2. Mixtures

Not applicable

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
First-aid measures after inhalation	: If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
First-aid measures after skin contact	: Wash with soap and plenty of water. Consult a physician.
First-aid measures after eye contact	: Flush eyes with water as a precaution.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/effects after skin contact	: May be harmful if absorbed through skin. May cause skin irritation.
Symptoms/effects after eye contact	: May cause eye irritation.
Symptoms/effects after ingestion	: May be harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Reactivity : Not available.

5.3. Advice for firefighters

Firefighting instructions	: Wear self contained breathing apparatus for fire fighting if necessary.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

For containment : Pick up and arrange disposal without creating dust. Sweep up and shovel. Do not flush with water. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Hygiene measures	: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Keep container tightly closed in a dry and well-ventilated place.
Storage conditions	: Store in freezer (-20°C). Protect from light, air and moisture.

7.3. Specific end use(s)

No additional information available

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



Materials for protective clothing : Wear suitable protective clothing and gloves.

Hand protection : Wear suitable protective clothing and gloves.

Eye protection : Wear safety glasses with side shields (or goggles) and a face shield.

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : When appropriate, use NIOSH/CEN approved respirator.

Environmental exposure controls : Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline solid
Molecular mass	: 332.51 g/mol (Labeled)
Color	: Yellow
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: 57 - 58 °C (135 - 136 °F)
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: 395 °C (743 °F) at 1,013.25 hPa (760 mmHg)
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: < 0.0001 hPa (<0.0001 mmHg) at 20 °C (68 °F)
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Specific gravity / density	: 981.7 g/cm ³ at 25 °C (77 °F)
Solubility	: Water: 0.00001 g/l at 20 °C (68 °F) - OECD Test Guideline 105
Log Pow	: 9.4 at 25 °C (77 °F)
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Not available.

10.2. Chemical stability

Three years after receipt of order if stored as stated in "Storage" section. Re-QC after three years.

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10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Not available.

10.5. Incompatible materials

Strong oxidizing agent.

10.6. Hazardous decomposition products

Carbon oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

VITAMIN A ACETATE 3-4% CIS (10,19,19,19-D4, 96%) (127-47-9 (Unlabeled))

LD50 oral rat	> 2000 mg/kg male and female (OECD Test Guideline 401)
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Eyes - Rabbit Result: No eye irritation
Respiratory or skin sensitization	: Maximisation Test - Guinea pig Result: Does not cause skin sensitization. (OECD Test Guideline 406)
Germ cell mutagenicity	: Ames test. S. typhimurium result: negative
Carcinogenicity	: Carcinogenicity - Rat - Oral. Tumorigenic: Neoplastic by RTECS criteria. Skin and Appendages: Other: Tumors. . Carcinogenicity - Rat - Oral. Tumorigenic: Neoplastic by RTECS criteria. Endocrine: Thyroid tumors. Skin and Appendages: Other: Tumors.
Reproductive toxicity	: Damage to fetus possible. . Reproductive toxicity - rat - Oral. Effects on Newborn: live birth index (# fetuses per litter; measured after birth). Effects on Newborn: Viability Index (e.g, # alive at day 4 per # born alive). Effects on Newborn: Growth statistics (e.g, reduced weight gain). . Reproductive toxicity - Rat - Oral. Presumed human reproductive toxicant. Developmental Toxicity - Rat - Oral Effects on Embryo or Fetus: Other effects to embryo. . Developmental Toxicity - Rat - Oral Specific Developmental Abnormalities: Respiratory system. . Developmental Toxicity - Rat - Oral Effects on Embryo or Fetus: Cytological changes (including somatic cell genetic material). . Developmental Toxicity - Rat - Oral Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Eye, ear. Specific Developmental Abnormalities: Craniofacial (including nose and tongue).
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Acute vitamin A intoxication may occur with exposure to high concentrations. . Symptoms and signs of poisoning are: Sedation. Irritability. Headache. Skin disorders. Gastrointestinal disturbance. Congenital abnormalities may occur after exposure to high concentrations during pregnancy.
Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/effects after skin contact	: May be harmful if absorbed through skin. May cause skin irritation.
Symptoms/effects after eye contact	: May cause eye irritation.
Symptoms/effects after ingestion	: May be harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

VITAMIN A ACETATE 3-4% CIS (10,19,19,19-D4, 96%) (127-47-9 (Unlabeled))

LC50 fish 1	1.37 mg/l Oncorhynchus mykiss (rainbow trout) - 96 h (OECD Test Guideline 203)
EC50 Daphnia 1	46 mg/l Immobilization EC50 - Daphnia magna (Water flea) - 48 h (OECD Test Guideline 202)
EC50 other aquatic organisms 1	> 1000 mg/l Respiration inhibition EC50 - Sludge Treatment - 180 min. (OECD Test Guideline 209)
ErC50 (algae)	0.103 mg/l Growth inhibition EC50 - Desmodesmus subspicatus (Scenedesmus subspicatus) - 72 h (OECD Test Guideline 201)

12.2. Persistence and degradability

VITAMIN A ACETATE 3-4% CIS (10,19,19,19-D4, 96%) (127-47-9 (Unlabeled))

Persistence and degradability	Aerobic - exposure time: 28 d.
Biodegradation	18.5 % Not readily biodegradable. (OECD Test Guideline 301B)

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12.3. Bioaccumulative potential

VITAMIN A ACETATE 3-4% CIS (10,19,19,19-D4, 96%) (127-47-9 (Unlabeled))

Log Pow	9.4 at 25 °C (77 °F)
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12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other adverse effects : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.

Product/Packaging disposal recommendations : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Ecology - waste materials : Dispose of as unused product.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Additional information

Other information : No supplementary information available.

Special transport precautions : Not dangerous goods.

Overland transport

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

Special transport precautions : Not dangerous goods.

14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

VITAMIN A ACETATE 3-4% CIS (10,19,19,19-D4, 96%) (127-47-9 (Unlabeled))

SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
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SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard
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SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313
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15.2. International regulations

CANADA

VITAMIN A ACETATE 3-4% CIS (10,19,19,19-D4, 96%) (127-47-9 (Unlabeled))

Listed on the Canadian DSL (Domestic Substances List)

15.2.1. National regulations

No additional information available

15.3. US State regulations

VITAMIN A ACETATE 3-4% CIS (10,19,19,19-D4, 96%)(127-47-9 (Unlabeled))

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

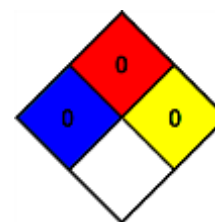
Full text of R-, H- and EUH-phrases:

Aquatic Chronic 4	Hazardous to the aquatic environment - Chronic Hazard Category 4
Repr. 1B	Reproductive toxicity Category 1B
H360	May damage fertility or the unborn child
H413	May cause long lasting harmful effects to aquatic life
R53	May cause long-term adverse effects in the aquatic environment
R60	May impair fertility
R61	May cause harm to the unborn child

NFPA health hazard : 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 0 Minimal Hazard

Physical : 0 Minimal Hazard

CIL Substance SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product